<u>Abstract</u>

A method of determining a placement of services of a distributed application onto nodes of a distributed resource infrastructure comprises first, second, and third steps. The first step forms communication constraints between node pairs. The communication constraints ensure that a sum of transport demands between a particular node pair does not exceed a transport capacity between the particular node pair. Each term of the sum comprises a product of a first placement variable, a second placement variable, and the transport demand between the services associated with the first and second placement variables. The second step forms an objective. The communication constraints and the objective comprise an integer program. The third step employs a local search solution to solve the integer program, which determines the placement of the services onto the nodes.